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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,804	03/25/2004	Luca D'Ottone		7583

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LUCA D'OTTONE  
2050 CORAL WAY #503  
MIAMI, FL 33145

EXAMINER
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LANGEL, WAYNE A

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/808,804

Applicant(s)

D'OTTONE, LUCA

Examiner

Wayne Langel

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3-25-04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al in view of Bolme or Herbrechtsmeier et al or Lassman et al, further in view of either of Tamony et al, even further in view of either Sheu et al '950 or Sheu et al '125, still further in view of Larue et al. Jain et al disclose a process for removing nitrogen oxides from gas streams (see the Abstract), and disclose at col. 4, lines 17-26 that the scrubbing liquid may be a basic aqueous solution such as the alkali metal or alkaline earth metal hydroxides. The differences between the process disclosed by Jain et al, and that recited in applicant's claims, are that Jain et al do not disclose that a mixture of hydroxides of alkali metal and alkaline earth metal hydroxides should be used, that the mixture should be passed through a second filter system, and that the purified gas should be collected in a sealed delivery tank. Bolme, Herbrechtsmeier et al and Lassman et al all disclose that nitrogen dioxide is more readily absorbed than nitric oxide in a mixture of alkali metal and alkaline earth metal hydroxides. (See the Abstract and col.4, lines 47-53 of Herbrechtsmeier et al, col. 1, lines 57-68 of Bolme, and col. 1, lines 50-58 of Lassmann et al.) Tamony et al teach at col. 1, lines 13-17 that nitrogen dioxide is readily soluble in certain scrubbing solutions such as sodium hydroxide, but nitric oxide is not very soluble in most aqueous solutions. Sheu et al '125 and Sheu et al '950 both disclose that zeolites are useful for purifying nitric oxides. (See the Abstract

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of each reference.) It would be obvious from Bolme or Herbrechtsmeier et al or Lassman et al in view of Tamony et al to modify the process of Jain et al by employing a mixture of alkali metal and alkaline earth metal hydroxides as the scrubbing solution, since one of ordinary skill in the art would appreciate that if an alkali metal or alkaline earth metal hydroxide would function as the absorbent, then a mixture of such hydroxides would also function. It would be expected from Tamony et al that nitrogen dioxide could be removed from a mixture of the same with nitric oxide, since Tamony et al disclose that nitrogen dioxide is readily soluble in certain scrubbing solutions such as sodium hydroxide, but nitric oxide is not very soluble in most aqueous solutions. It would be further obvious from either Sheu et al '125 or Sheu et al '950 to pass the mixture through a zeolite to achieve the cumulative effect of nitrogen dioxide removal from both the basic solution and the zeolite. It would be even further obvious from Larue et al to collect the nitric oxide in a sealed delivery tank, since Larue et al establish the conventionality of storing nitrogen oxides in tanks in the Abstract and col. 2, lines 56-60.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Terms such as "common impurities" and "trough" render the scope of the claims vague and indefinite. In claim 6, "ASCARITE" is indefinite since it is a trademark. In claims 4 and 8, respectively, "selected from a group comprising" and "anyone of the following compounds" is improper Markush terminology.


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The other references are made of record for disclosing various methods for removing nitrogen oxides from gases.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Langel whose telephone number is 571-272-1353. The examiner can normally be reached on Monday through Friday, 8 am - 3:30 pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Wayne Langel  
Primary Examiner  
Art Unit 1754